

What is Claimed is:

1. A steerable catheter comprising
an elongated catheter body secured to a
proximal handle and having a distal end carrying at
least one functional element,

5 a unitary spring structure for steering
said distal end comprising at least two orthogonally
arranged flattened sections bendable normal to
flattened planes of said sections,

10 said flattened sections being axially
displaced along the length of said spring structure
thereby comprising a proximal flattened section and
a distal flattened section,

15 at least one steering wire being attached
to each flattened section to apply bending forces
thereto,

a coil spring having a hollow interior
lumen extending along the length of said catheter
body, a distal end of said coil spring being affixed
to said proximal flattened section,

20 at least one steering wire extending
distally from said distal end, said wire being
attached to said distal flattened section for
application of bending forces thereto, said steering
wire having a proximal end connected to means in
25 said handle for application of pulling forces of
said wire, and

at least one steering wire being attached
to said proximal flattened section for exertion of
bending forces thereon.

2. A steerable catheter comprising
an elongated catheter body secured to a
proximal handle and having a distal end carrying at
least one functional element,

5 a distal steering assembly which includes

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a section containing a preshaped wire, said wire being biased to bend said assembly into a curvilinear shape in a first plane, and

10 a second steering mechanism independent from said preshaped wire which enables bending said assembly in a second plane that is non-parallel to the bending plane of the preshaped section.

3. A catheter according to claim 2 wherein said preshaped wire is located proximally to said second steering mechanism.

5 4. A catheter according to claim 2 wherein said preshaped wire is contained within an introducer tube for introduction into a living body, wherein said introducer tube retains said preshaped wire in a generally linear orientation.

5. A catheter according to claim 1 wherein said unitary spring structure comprises two orthogonally arranged segments which are soldered together to form said unitary structure.

6. A catheter according to claim 1 wherein a pair of steering wires is attached to each of said orthogonally arranged flattened sections.

7. A catheter according to claim 1 wherein a guide tube containing at least one of steering wires is attached to a proximal one of said flattened sections.

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